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ABSTRACT

This report responds to a proposal for an internal audit of the library collection at Virginia Commonwealth University (VCU) and describes various measures that University Library Services (ULS) has already implemented to automate the inventory process and improve security. Introductory materials provide an executive summary and background information. The latter includes both a brief review of national library practice relating to inventories of academic library collections and brief descriptions of alternatives to a complete inventory. The main body of the report is divided into four sections: (1) current developments toward a book and serials inventory at VCU (Autolink Project, retrospective conversion project, insertion of security strips, adding journal holdings to the online catalog, use of the Faxon SC10 System, and a summary of the current status of the book and serials collections); (2) purposes of an inventory; (3) determining the nature of the current problem at the VCU library (operational imperatives and assumptions); and (4) recommendations (book inventory, serials inventory, special inventories). Appendixes contain Autolink statistics and a chart summarizing the inventory status of the library collections. (16 footnotes) (CGD)

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VIRGINIA COMMONWEALTH UNIVERSITY

UNIVERSITY LIBRARY SERVICES

LIBRARY COLLECTIONS INVENTORY

Report to the VCU Board of Visitors

prepared by:
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24 October 1988

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UNIVERSITY LIBRARY SERVICES
LIBRARY COLLECTION INVENTORY

Executive Summary

Definition. An inventory of the books and serials (journals) in the University Library Services' (ULS) collection is defined to include not only the actual inventory but the many related operations that must be completed as a result (such as updating catalog records to reflect a missing status, replacing missing volumes, and performing necessary repairs). The document reviews the report of VCU Internal Audit and the original library response.

Review of National Practice. A review of national practice in academic libraries is included. Among the findings are that: comprehensive inventories are commonly believed to be impractical for large library collections; samplings of collections, usually based on predictive data (such as circulation statistics), are generally preferred to comprehensive inventories; inventories of serials are generally more problematic than those of books; automated inventories are less expensive and faster than manual inventories; few libraries have conducted inventories recently or on an ongoing basis; benchmarks of the percentage of the collection that is missing need to be established to determine when an inventory is necessary; and grant funding for an inventory project is unlikely.

Purposes of an Inventory. The primary reasons commonly cited for performing an inventory of the collection include: increased security; the possibility of claiming losses against insurance; identification of the percentage of titles that are lost; and updating the online catalog to reflect what is truly available. Auxiliary purposes include: weeding the collection of titles, editions, or copies that are no longer needed; identifying items in need of repair; identifying mislabeled items; and, reducing the number of user requests to search for items on a case-by-case basis.

Current ULS Environment Relating to an Inventory. It is noted that ULS has engaged since 1983 in a few projects that, when viewed collectively, are the equivalent of a full inventory of the collection. Prior to undertaking any new inventory, a number of factors must be considered. Current staffing is already working at peak capacity. The current automated library system has hardware and software limitations making a book inventory very problematic. ULS is engaged in the completion of many major projects that also require a substantial investment of time (including implementation of the new automated system, issuing RFPs for library acquisitions, etc.)

Recommendations. Separate recommendations are given for books and serials. For books, it is recommended that current inventory-related projects, and the implementation of the new library system, should be completed prior to undertaking a book inventory. Thereafter, a pilot inventory should be performed to identify the subject areas with the highest degree of loss; comprehensive inventories should be performed only of those areas. For serials, it is recommended that a complete inventory project should be undertaken in the near future. To accomplish these tasks in a timely manner may require that other higher priority tasks will need to be deferred.

(alh 10-24-88)

UNIVERSITY LIBRARY SERVICES
LIBRARY COLLECTION INVENTORY

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UNIVERSITY LIBRARY SERVICES
COLLECTION INVENTORY PROPOSAL

1. **Background.**

1.1. **Terminology.** Although this report will make every effort to avoid the use of technical jargon, there are a few concepts that it is best to define.

1.1.1. **Inventory.** Includes both the comparison of a list of holdings to the items on the shelves and in circulation, and the many related operations that must be completed as a result (such as updating catalog records to reflect a missing status, replacing missing volumes, and performing necessary repairs).

1.1.2. **Linking.** Each copy or volume of a book receives a unique identification number that can be read by a computer. This copy number is called an OCR number (for optical character recognition). Each of these numbers is entered into the library computer system and is "attached" to the catalog record that identifies the title. The process of attaching the OCR number to the catalog record is called "linking."

1.1.3. **LC classification number (or LC subject number).** Each title of a book has a subject identifier that begins with one or two letters and is followed by a number (e.g., BF4593). These identifiers are assigned in accordance with a subject scheme created by the Library of Congress (LC).

1.1.4. **Online Catalog.** Access to the ULS collections is provided through the online catalog. The catalog includes records about each title the library owns, and information about each copy or volume of that title. The current ULS catalog system is called ALIS (Automated Library Information System). The new system to be installed is NOTIS (Northwestern Total Integrated System).

1.1.5. **Catalog maintenance.** The process of updating the catalog to show whether an item is missing, lost, etc.

1.1.6. **Serials/Journals.** Although technically the term "serials" is more inclusive than simply "journals" (also known as "periodicals" or "magazines"), in this paper these terms will be used interchangeably.

1.2. **Impetus for Inventory.**

In early 1987 a report about security at the ULS was issued by VCU Internal Audit that noted the following:

> The last complete library physical inventory was taken approximately ten years ago. Recommendation. A complete physical inventory should be taken in 1987 with any significant differences reported and investigated. Inventories should be scheduled more frequently than past procedure.[1]

Responses from ULS noted that:

- An inventory itself does nothing to improve security because the inventory only discovers which material is already missing, and therefore unavailable for protection.

- o The most recent comprehensive inventory was in 1970-1971. Even with a collection that is completely covered by the automated circulation system, frequent complete inventories are of dubious value for security purposes because of the enormous time required and costs involved.
- o The library was already engaged in a multi-phased project to conduct an inventory of all items purchased in 1982 or before. This project (Autolink) is discussed in further detail in this report.
- o The items not included in the pre-1983 Autolink project were purchased and processed in 1983 or after. Therefore, with the completion of Autolink, ULS has, in essence, performed an inventory of the entire collection within the last five years.

1.3. National Library Practice: A Brief Review.

Over the last thirty years there has been relatively little written or reported about inventories of library collections. Nearly all of the published studies were concerned solely with books, and not with journals.[2] What follows is a brief review of some of the key findings to date.

1.3.1. **Reasons to Perform Inventories.** Hardly any of the literature describes <u>why</u> an inventory should be undertaken. Many articles assume that inventories are a good idea, which is odd because many of these same articles note that inventories are not common library practice.[3]

1.3.2. **Cost.** Most of what has been written has noted that complete collection inventories are prohibitively expensive, particularly when the collection size is over 100,000 volumes. There is some belief, however, that it may be easier to perform an inventory of a collection that is fully controlled through an automated system.[4] [The current VCU collection size is estimated to be approximately 800,000 volumes.]

1.3.3. **Benchmarks to Establish the Need for Comprehensive Inventories.** Complete collection inventories generally are considered desirable only for those libraries where the rate of loss is expected to be relatively high across the entire collection, however there is no common definition of what constitutes a high loss rate.[5]

1.3.4. **Alternatives to Complete Inventories.**[6]

1.3.4.1. **Census Counts.** A comparison by LC classification numbers of a census of the collection compared to the current expected count of the collection (a census) may be a reasonable means to discover if a full or selected inventory is desirable.[7]

1.3.4.2. **Random Sampling.** Given the impracticality of complete collection inventories, most of the literature advocates either random sampling of a collection, or targeting areas of the collection that are known to have particularly high loss rates.[8] Other variations include conducting a pilot sample to determine if a comprehensive sample is needed[9], sampling of only recently added acquisitions, or calculating annual losses.

1.3.4.3. **Predictive Sampling.** One study in particular concluded that current use of the collection (as determined, for example, from a review of automated circulation data) is a good predictor of those areas that will have the highest loss rates. These targeted areas should prove to be the most fruitful subject areas for which a complete inventory should be undertaken.[10]

1.3.5. **Misshelving and Follow-up Searching.** All the studies included multiple searches over a few months for items not found the first time in the stacks.[11] The literature is not dispositive on the question of the effect of misshelving on the library's loss rate.[12]

1.3.6. **Frequency of Inventories.** There are reported models for both one-time projects and for ongoing inventories of selected subject areas. Complete inventories are rarely advocated more than every ten years, but reports in the literature seem to indicate that complete inventories are performed far less regularly (if ever) by most libraries.[13]

1.3.7. **Funding of Inventory Projects.** Few of the articles report their source of funding, however it would seem that nearly all come from University funds. Bahr notes that "there is a rare likelihood of a grant. ... Most foundations will not make grants for projects that are a routine part of an organization's activities, as library inventories ought to be."[14]

2. **Current Developments Toward an Inventory at ULS.**

ULS has been aware for some time of problems with materials that are represented in the catalog as being available, but are not on the shelves. In an effort to remedy this situation a number of steps have been, and are, being taken. These steps taken together demonstrate that ULS has been selectively inventorying the collection in those areas most in need of attention. Some of the most important projects are discussed below.

2.1. Books.

2.1.1. **Autolink Project: Purpose and Results.**

2.1.1.1. **Background.** One major premise of a comprehensive inventory project was that it would be practical only if automation could be used to its fullest. Traditional manual inventories would be too cumbersome for a collection the size of ULS'.

An "automated inventory" would permit ULS staff to go through the stacks quickly with an OCR reader, pull each volume, and wanding the OCR number into the computer. The computer would then compare this information against the entire database, and would report back the number of items that were not found on the shelves nor were in circulation at the time of the inventory. The result would be the list of missing volumes. These items would be re-searched, and after re-searching would be shown as "missing" in the online catalog.

To perform an automated inventory, however, requires that all volumes in the stacks already have computer-readable OCR identification numbers linked in the automated system.

When ULS first began using ALIS in 1983, only a very small portion of the collection was linked. All new items were linked as they were cataloged and unlinked items were linked if they circulated. By 1986, statistics revealed that a very low percentage of the collection required linking after circulation, and only an estimated 35% (or ca. 150,000 titles) of the collection remained unlinked.

A related problem with unlinked items is that they did not display a call number in the online catalog, thus requiring library users to go to a second source (the old microfiche catalog) to obtain that information. This was a source of user frustration that ULS sought to alleviate.

2.1.1.2. **Current Status.** The Autolink Project began in 1986 to finish linking all remaining unlinked items. The project required many steps that were long and technically complicated, and it was undertaken with no additional staff nor funding. An important benefit of the project in addition to those cited above is that the Autolink Project alone resulted in a nearly complete inventory of the book collection.

2.1.1.3. **Results.** Most phases of the Autolink Project will be completed by the end of the 1988 calendar year. At the time of this writing, the first search for books has been completed at the Tompkins-McCaw Library (TML), and the first search and re-search has been performed at the James Branch Cabell Library (JBC). The project resulted in a number of corrections that were required to be made to the catalog record, and satisfactory progress is being made to complete these. Remaining to be done, however, is the updating of the catalog records for the items not found to reflect the status of "missing." Given the large number (currently over 18,000 titles), and the need to devote staff to other major projects (such as implementation of the new library system) this portion may not be completed for another year.

The statistical results of the Autolink Project are reported in detail in Appendix A. The overall percentages of loss at this stage of the project are as follows:

JBC	21.1% missing (13,994 items)
TML	23.6% missing (4,382 items)
ULS	21.6% missing (18,476 items)

The loss rate is not distributed evenly throughout the collection. Depending upon the LC subject area, the range at JBC was 6.2% to 54.4%, at TML it was 0% to 62.5%, and throughout ULS from 7.1% to 47.5%.

Some caution must be taken, however, when interpreting these results. First, some classification areas had so few titles (fewer than 40) that a small loss could result in a highly inflated figure. Furthermore, the second search at TML will likely result in a greater reduction than at JBC (where approximately 8% of the missing items were found) because many items were probably transferred from the general stacks to Special Collections and Archives. The second search at TML will include a check in both locations.

Most importantly, only the oldest portion of the collection, and the portion that has not had any circulation since 1982, was included in the sample. Therefore, this is by far a worst case situation. It would be a serious mistake to attempt to generalize this data to the entire collection.

With the completion of the project, ULS will have had a nearly complete inventory of the collection within the last five years because all books either (1) were cataloged in 1983-1988, and therefore accounted for within the five year period, or (2) were part of the Autolink Project. Autolink was, in essence, a complete inventory of all titles in the collection that had not circulated within the past five years. The only exception was for items that had not previously been retrospectively converted to computer-readable form. These items are discussed in further detail below.

2.1.2. **Retrospective Conversion Project.** In 1975, ULS began to use a national computer system (now called the Online Computer Library Center, or OCLC) to catalog its books. After 1975, nearly all newly cataloged books were cataloged on OCLC. Although ULS had a card catalog at the time, an important by-product was the generation of a computer tape of all catalog records.

In 1979 ULS began to use these computer tapes to generate a microfiche catalog. In an effort to have the microfiche catalog reflect as much of the library's holdings as possible, ULS undertook a "retrospective conversion" (or "recon") project to create computer-readable catalog records for all the items that had been cataloged prior to 1975.

A random sampling conducted in 1985 revealed that probably between 90% and 95% of the collections of both libraries were retrospectively converted. In 1987, the State Council of Higher Education for Virginia received funding from the General Assembly for all libraries in the state to fully convert their collections by the end of the 1987-1989 biennium. For VCU this will probably include no more than 50,000 books.

Because these books were not retrospectively converted, they were not included in the Autolink Project. At the conclusion of the recon project, however, all of these items will have been identified and either converted (if the items are found on the shelves) or removed from the library records (declared lost). ***Thus an inventory of all items requiring retrospective conversion will be completed by the end of the current biennium.***

2.2. **Serials (Journals).** Since 1985 a number of important measures have been taken to improve the security and inventory of journal holdings.

2.2.1. **Insertion of Security Strips.** Since 1987, ULS has begun to insert security strips (or tattle-tapes) into all new issues of journals. Current journals are therefore now under the control of the theft detection system used at both libraries.

2.2.2. **Adding Journal Holdings to the Online Catalog.** As a result of a 1986-1987 project, information about currently received journal holdings was added to the online catalog. *To ensure accuracy of the data, two measures were taken. First, it was necessary in approximately 10% of the cases to go to the shelves and perform an actual inventory of the holdings, and to correct all records where necessary. Second, after data input was completed a random sample of the online holdings at TML was compared to the shelves and the accuracy (excluding minor errors) was found to be 96%. This was a significant improvement over the manual records, which only had an approximately 85% rate of accuracy.*

2.2.3. **Use of the Faxon SC10 System.** Following this year's serials cancellations, ULS will receive over 60,000 separate issues for over 10,000 serial titles each year. In the past, we used a special function of OCLC to keep a record of our holdings. In 1985, however, OCLC announced that they would cease providing that function at the end of 1988. As a result, ULS contracted with the Faxon Company to begin using their serial control system. System implementation began during Spring 1988. *As with the online catalog holdings project, shelf inventories are occasionally performed as we begin the full implementation of the system.*

2.3. Summary: Current Status.

Books. For books, it can be said that a nearly complete inventory of the collection has been completed within the last five years. It should be recognized, however, that this was a piecemeal inventory that was performed over the five year period, and not at one time. An inventory of the only portion of the book collection that previously has been excluded (i.e., the non-retrospectively converted collection) will be completed by the end of the current biennium.

Serials. Many measures have been taken in recent years to improve the quality of information about serials holdings, however actual inventories have been rather limited. More work is possible in this area, but may be hampered by some inhibiting factors that will be discussed in further detail below.

3. Purposes of an Inventory.

Although an inventory has broad appeal, and would seem a relatively simple undertaking, this is not the case. A library inventory is unlike a business stock inventory. In a stock inventory, there are large quantities of a limited number of generic items (e.g., 100 cans of peas). In a library, the inventory must account for small quantities of many specific items (e.g., one copy of each title of a book). There is another aspect, however, where a business analogy is applicable. Similar to the purchase of a machine, where the purchase price is normally exceeded by the cost of maintenance, the cost of performing the actual inventory is far exceeded by the bibliographic maintenance that will be engendered.

As Alice Harrison Bahr has noted, if an inventory is to be undertaken, the library should enumerate all the decisions to be made to do the job effectively. The first task is to enumerate the goals of the inventory. The following are often cited as the reasons for conducting an inventory:

3.1. **Increased Security.** By discovering the gaps in the collection, it may be possible to identify patterns of loss or safeguards that can be taken to improve security over the collection (such as placing certain types of materials under greater control). There must be some limitations, however; if there is widespread theft, it may not be practical to put nearly the entire collection into a secured area.

3.2. **Insurance.** If it can be determined precisely which titles have been lost, it may be possible to recover the cost of those materials from insurance. This becomes particularly important if the lost titles were particularly valuable. In reality, recovery from insurance is unlikely. Book stock tends to be devalued, and insurance companies rarely provide payments for losses that are established as a result of a general inventory.

3.3. **Library Service Goals.** It is more probable that an inventory would be undertaken to achieve some service goals. Chief among these are:

3.3.1. To identify the number, and provide a list, of titles that can or should be replaced because they are now lost. As an integral part of the inventory, the library would estimate the cost of replacement and either secure separate funding for replacement, or attempt to allocate for the expense from the existing budget budget. [15]

3.3.2. To update the online catalog to reflect what is truly available in the collection. This would reduce user dissatisfaction caused by not finding books that were expected to be on the shelves.

3.4. **Auxiliary Functions.** There are also auxiliary functions that piggyback on the inventory. These functions do not justify the inventory, but provide additional purposes as long as the inventory is being conducted anyway. For example:

3.4.1. To weed the collection of titles, editions, or multiple copies that are no longer needed.

3.4.2. To identify books that are in need of repair or replacement because they have become worn.

3.4.3. To identify mislabeled books.

3.4.4. To verify accession or call numbers. This is much more likely to occur from a traditional manual shelflist inventory than from an automated inventory (where the call numbers would not be reviewed by the shelf-reader).

3.4.5. To produce a list of books requiring special attention (e.g., books that should be transferred to the secured collection).

3.4.6. To reduce the number of user requests to search for individual items that were not located by that user on the shelf.

4. Determining the Nature of the Current Problem at ULS.

As noted earlier in this document, in many respects ULS has already made many efforts that collectively are the equivalent of a comprehensive inventory of the book collection. If, however, a comprehensive inventory of either the book or serial collections (or both) is still considered desirable, it is necessary to better understand: (1) the other operational imperatives upon ULS, and (2) the assumptions upon which an inventory project (or projects) would need to be based.

4.1. Operational Imperatives: External and Inhibiting Factors Affecting an Inventory Project.

Before deciding that now is a propitious time to embark upon an inventory, the following should be considered:

4.1.1. Staffing. Depending upon the other variables examined below, an inventory of the book collection using existing staff might be marginally possible, however staff would be called away from performing their normal duties. Hardly any of the serial volumes are linked, thus requiring a manual inventory. Use of current staff only to perform any inventory is possible only if performed over an extended period of time.

4.1.2. Current ALIS Hardware and Software Capabilities. ULS is now in a transition stage as we begin to move away from the current ALIS system and onto the new NOTIS system. The transition is likely not to be completed until mid-1990 at the earliest. There are significant problems if we attempt a book inventory using the current ALIS system:

4.1.2.1. Local programming would be necessary to generate the statistics and reports we need to design the inventory project (such as the number of circulations per item within each LC classification area).

4.1.2.2. Previous releases of the vendor-supplied programs necessary to cross-check the current database against the shelves have not run properly. ULS has not fully tested the latest release.

4.1.2.3. The amount of storage space on the current system is relatively limited, and is filling up quickly. ULS expects that we will not need additional storage space before we must transfer operations to NOTIS, but this would probably be necessary if a major system function such as an inventory were added.

4.1.2.4. The processing power of the computer is already under a significant strain. Response time for public use is particular poor during peak hours of use. An automatic inventory project would add more users to the system (to wand in OCR numbers) and would add a batch processing load to the system (to process the results of the inventory).

4.1.3. **NOTIS Capabilities.** Although the NOTIS system does not have an inventory function per se, the ability to locally program the system to derive the necessary information and perform the inventory function will likely be significantly easier on NOTIS than on ALIS. Furthermore, the issues of processing power and storage space would not be at issue.

4.1.4. **Other Projects within ULS.** There are already many demands upon ULS created by important projects, some of which have been mentioned and others of which are controlled externally. All of these projects are very demanding of staff time and affect, in some way, the same staff who would be called upon to perform an inventory. Some of these projects are: NOTIS implementation; issuance of a series of RFPs for purchase of library materials before the end of the fiscal year; completing the implementation of the Faxon SC10 serials control system; and, completion of all aspects of the serials subscription cancellation project.

4.1.5. **Shelving Space for Serials at TML.** At TML the entire backfile of serials needs to be realphabetized before an inventory could be undertaken. However, the lack of adequate shelving space at TML would cause particular problems for an inventory project because there is insufficient space to temporarily house materials as they are being shifted. The shelving is so tight in some places that a new volume can be put in only if another volume is pulled out.

4.1.6. **Implications for ARL and AAU Membership.** For many years the University has maintained as an institutional priority the achievement of membership in the Association of Research Libraries. In many respects this goal is related to the larger goal of institutional membership in the AAU. The membership criteria of ARL, however, place a significant emphasis on the number of cataloged volumes in the library. If an inventory were conducted that significantly reduced our volume count, this would make the already difficult goal of ARL membership even more elusive.

4.2. **Assumptions.** If, after consideration of these inhibiting factors, it is determined that one or more inventory projects should be undertaken, the following assumptions should be adopted:

4.2.1. **Pilot Inventories.** Pilot inventories should be undertaken to establish the nature of the problem. Separate pilot studies should be taken for books and journals, and for JBC and TML. Whenever practical, pilot inventories should be based upon predictive modeling, such as to use circulation use statistics to generate a stratified random sample.

4.2.2. **Benchmarks for Comprehensive Inventories.** As part of the pilot inventory, a prior benchmark of 10% should be established that will govern the need for a complete inventory.

For books, benchmarks should be applied to each LC classification level (probably at the double-alpha level) and not to the collection as a whole. This may result in complete inventories of only some subject areas or at only one library, as appropriate.

For those subject areas where the benchmark is exceeded, the inventory should employ the automated inventory technique and not be conducted manually.

4.2.3. **Inventory Project Scope.** The "inventory project" must be defined to include not only the actual reading of the shelves and identification of missing items, but also:

4.2.3.1. At least one re-search of the collection to determine if the item has been returned.
4.2.3.2. Updating the online catalog to reflect which items are missing.
4.2.3.3. Identifying and purchasing (when available) items in need of replacement.
4.2.3.4. Weeding the collection of found, but unnecessary, items.
4.2.3.5. Identifying and repairing worn or mutilated items.

4.2.4. **Collections to Be Inventoried.** Because of the specialized nature of some of the materials and collections, the initial phases of the inventory project should include only general stack books and journals, and the reference collections of both libraries. Specifically excluded are audiovisual materials and special collections.[16]

5. **Recommendations.** Based upon the review provided in this paper, the following are recommended for action. Neither work procedures nor cost estimates are provided at this time; these will be forthcoming depending upon the courses of action chosen.

5.1. **Book Inventory.** Many efforts relating to a book inventory have been undertaken at ULS during the past five years. No significant efforts are proposed at this time because of these efforts, and because there are too many external factors that would inhibit an inventory effort. In particular:

5.1.1. Major existing projects related to the inventory of the book collection should be completed before any comprehensive inventory is undertaken. In particular, all work related to the Autolink Project, the Recon Projects, and NOTIS implementation should be finished. These projects are scheduled for completion no later that June 1990.

5.1.2. A pilot inventory using a stratified random sample based upon a predictive model should be designed during the 1990-1992 biennium. If time permits within that biennium, the pilot study should be undertaken. If not completed within 1990-1992 biennium, the pilot study should be undertaken during the 1992-1994 biennium.

5.1.3. Based upon the results of the pilot study, a comprehensive inventory should be scheduled for those LC classification sections of the collection that reveal a greater than 10% loss rate in the pilot. The comprehensive inventories should be ranked in decreasing order of importance based upon the percentage of loss.

5.1.4. Part of the purpose of the pilot study should be to establish firm cost estimates for the execution of comprehensive inventories. Comprehensive inventories should be undertaken only if all aspects of the inventory are included (as set forth in the Assumptions above).

5.1.5. Because of the increased importance of monographs to the academic library (and decreased importance to the medical library), comprehensive book inventories generally should be undertaken first at JBC.

5.1.6. After the completion of any comprehensive inventories, pilot inventories of no more than 1,110 items per library (95% confidence, ± 3%) should be scheduled every four years. These inventories should begin by the 1994-1996 biennium.

5.2. **Serials Inventory.** Bound volumes of journals have always had much more restrictive circulation policies than books, and it is generally believed that the loss rate is significantly lower. Nonetheless, the systems to maintain records about serials have changed many times over the years, and there have often been questions about the reliability of some of the current information. A related problem is that much of the information about serials that are no longer published is not generally available through the online catalog or serials control system. In general, it is currently believed that this information is in greater need of improvement than that for books. Efforts to improve serials information would not be highly dependent upon either ALIS or the NOTIS implementation, and an inventory would enhance other projects now underway. For this reason, the following are proposed:

5.2.1. During the 1988-1990 biennium, a pilot inventory should be separately conducted at each library to establish work procedures, problem areas, and to establish firm cost estimates for the execution of the comprehensive inventories.

5.2.2. Following the pilot study, a comprehensive manual inventory project of serials holdings should be undertaken. Because of the staffing and other constraints noted earlier, this comprehensive inventory might begin in the current biennium, but would not be completed until the 1990-1992 or the 1992-1994 biennium.

5.2.3. The comprehensive inventory should be done first at TML because of the importance of the serials collection to medical research, and because of the perceived greater level of problem with serials holdings at TML than at JBC.

5.3. **Special Inventories.** Inventories of specialized collections (e.g., audiovisual, manuscripts, rare books, archives, etc.) should be separately proposed, and if necessary, funded. For some of these types of materials only small pilot studies may be necessary.

FOOTNOTES

[1] VCU Internal Audit report at section 3.0.

[2] Alice Harrison Bahr. Book Theft and Library Security Systems: 1981-1982. White Plains: Knowledge Industry Publications, 1981. p. 9.

[3] In addition to Bahr (at page 11), there are a few books and articles that do a good job of covering why a library might consider undertaking an inventory. Although the arguments are not always persuasive, some of the better discussions are included in:

Jess A. Martin. "Are Inventories Justified?" 59 Bulletin of the American Medical Library Association (January 1971): 50-51.

Thomas L. Welch. "An Approach to an Inventory of the Collections." 21 Library Resources and Technical Services (Winter 1977): 77-78.

[4] See, for example, the following:

C. Earle, et al. "LJ's Survey of Accession & Inventory Practices." 84 Library Journal (April 1959):1048-1052.

Vera Cunliffe. "Inventory of Monographs in a University Library." 21 Library Resources & Technical Services (Winter 1977): 72-76. "For a library of more than 100,000 volumes, the advantages gained by full inventory by conventional methods are far outweighed by the cost in money and inconvenience." Cunliffe goes on, however, to describe how an automated system was used to make an inventory project manageable.

Welch at pages 77-80 notes "Generally academic libraries have abandoned the previously widespread practice of conducting a regular and systematic inventory of their collections."

More recently at least one article has advocated that complete inventories may be practical. (See: Clifford H. Haka and Nancy Ursery. "Research Notes. Inventory Costs: A Case Study." 46 College & Research Libraries (March 1985):169-172.) There are reasons to believe, however, that Haka and Ursery's research may not be applicable to VCU. The loss rate they reported was particularly low (.8 percent for the University of Kansas LC collection and 3.29 percent for the older Dewey Collection). If the Haka and Ursery figures for salaries alone were computed against the ULS collection with a this low loss rate, the cost estimate would range from $12,000 to $66,000. Assuming a more realistic loss rate of 10 percent or more, these costs would substantially increase, and this estimate does not include the many non-salary costs such as book replacement, rebinding, supplies, etc. Furthermore, Haka and Ursery defined the cost of the inventory very narrowly to include only the cost of the actual inventory itself; excluded were such large costs as updating the catalog, performing book repairs, or replacing missing volumes.

[5] Jay B. Clark. "An Approach to Collection Inventory." 35 College & Research Libraries (September 1974):350-353. "The error rate [of items represented in the catalog that are not on the shelves] that justifies a [complete] inventory is a matter of judgment, with libraries suggesting rates that vary from 1 percent to 5 percent. However, the interruption of normal processing or the cost of additional staff to inventory a large collection, I believe, makes a loss rate of 10 percent a more realistic guideline."

Irene A. Braden. "Pilot Inventory of Library Holdings." 62 ALA Bulletin (October 1968). "An arbitrary figure of 5 percent had been set as the cut-off point in determining whether a full inventory was to be undertaken. ... The 4.37 per cent of books missing indicated that a complete inventory was not necessary at this time." (at page 1129).

As noted below, Creaghe sets the benchmark at a 3% annual loss rate.

6 The use of various alternative methods used by the Purdue University Libraries is contained in: Barbara Pinzelik. "Monitoring Book Losses in a Large Academic Library: Four Methods." (ERIC Document ED 203852 [1979]). Pinzelik notes that the last complete inventory had been conducted twenty years prior. She notes that of the four methods used, the intention was to continue sampling new materials only.

7 Bahr at pages 7-9.

8 In addition to the articles mentioned in the footnotes above by Clark, by Cunliffe, and by Welch, see also:

Powell Niland and William H. Kurth. "Estimating Lost Volumes in a University Library Collection." 37 College & Research Libraries (March 1976):128-136.

9 See, for example, Braden at pages 1129-1131.

10 David. F. Kohl. "High Efficiency Inventorying Through Predictive Data." 8 Journal of Academic Librarianship (May 1982):82-84.

11 Powell and Kurth in particular noted that "[O]ur results do suggest that first search results are likely to be quite misleading and that additional periodic searches are essential to obtain a reasonably accurate estimate."

12 Kohl (at page 84) found "little positive information was gained about materials out of order." However, Miller and Sorum found that "the effect of misshelved books, then, is to slightly inflate the final loss figure. It is true that to the user who cannot locate a misshelved book, it is "lost," ... [b]ut from the standpoint of property loss, the book is still in the collection." (Bruce Miller and Marilyn Sorum. "A Two Stage Sampling Procedure for Estimating the Proportion of Lost Books in a Library." 3 Journal of Academic Librarianship (May 1977): 77.

13 Thompson's 1958 survey of academic libraries revealed that 50% of the respondents continued to take a full, partial or infrequent inventory, and 38% had given up the practice altogether. Thompson stated there was "clear evidence that size [of library collection] and local conditions may well govern the practices in a given library as much as do the librarian's conviction or theory." (at p. 1050).

Bahr (at p. 17) notes that the Enoch Pratt Free Library "felt that inventories should not be taken more often than every ten years."

Norma S. Creaghe, et al. "Inventory Procedures for the Libraries at California State University, Northridge and a Possible CSU System Guide." (ERIC Document ED 244640 [1982]). "A complete inventory of the collection on a regular basis is too costly and would place an unfair burden on the staff of the individual libraries." (at p. 1). "...[A] systematic sample of a specified number of each Library of Congress letter classification [should] be taken every three (3) years. If the sample results reveal greater than a 3% annual loss rate in the books sampled, and this loss rate is as great or greater following a one year waiting period and a second sample, a full inventory of the collection is indicated, following consultation with the President of the campus." (at p. 2). Creaghe does not indicate why the inventory should be performed every three years, nor why the benchmark loss rate is 3%. It is also has not been ascertained whether the California State University system ever adopted these proposals.

Clifford H. Haka and Nancy Stevens. A Guidebook for Shelf Inventory Procedures in Academic Libraries. (OMS Occasional Papers number 10). Washington: Association of Research Libraries Office of Management Studies, 1985. A 1980 survey included in the Appendix indicates that 48% of the respondents had performed neither a complete nor a partial inventory in the previous ten years. The reasons cited were lack of staff, the amount of time involved, the cost, the large size of the collection, and that there was no demonstrated need. Of the 52% that reported in the affirmative, 44% had inventoried less than 10% of the collection. Therefore, 71% of all the respondents had performed either no inventory, or had inventoried less than 10% of the collection. This increases to 84% when libraries were included that inventoried less than 50% of their collections. Of the libraries that did perform some type of inventory, the problems included the impact on other library departments, the difficulties with inventorying serials, and the tedium of the work. Advantages included the establishment of a loss rate, identification of security needs, and the identification of missing items while they are still in print and less expensive to replace.

According to Jess A. Martin (at page 50), regular inventories may be more frequent in medical libraries. Of 74 respondents to a 1970 survey of medical school libraries (ranging in size from 4,500 to 450,000 volumes), only 14% reported that no inventory had ever been taken. An average of two inventories per library were conducted from 1960-1970. Fifteen percent indicated that they never intended to conduct another inventory. Whether such a high percentage of medical libraries continued to conduct inventories during the period from 1978-1988 as had from 1960-1970 is unknown. Martin notes that full inventories of medical collections "should be conducted at least once every five years and preferably once every three years," (p. 52) but Martin also "questions the wisdom of full inventories of collections of more than 100,000 volumes." (p. 50). For large collections he recommends spot checks or partial inventories.

[14] Bahr at page 27. Bahr does leave the door open somewhat if the library can "devise a plan that will yield significant research information of benefit to the wider library and educational community."

[15] Guidelines for replacement of books can be found in Thomas W. Shaughnessy. "Procedures for Inventorying and Replacing Missing Monographs in a Large Research Library." (ERIC Document ED 220094 [1981]).

Some factors Shaughnessy considers include whether the lost item is: one of multiple copies owned by the library; a textbook or book of readings; the latest edition of a work (especially for reference materials); a science book that is more than five years old; a social science work more than ten years old (except for anthropology, archeology or history texts); a classic in its field; in a foreign language; a minor work of a minor writer; or, out-of-print.

[16] It would likely be more practical and more desirable to inventory the relatively small rare book and manuscript collections regularly. The Society of American Archivists recommends that inventories be performed every three years "to verify the presence of particularly valuable items ... [and to provide] excellent proof of ownership." (Timothy Welch. "The Improvement of Library Security." College and Research Libraries (March 1977): 102.)

APPENDIX A: AUTOLINK DATA - ULS

Data reported below reflects second search at JBC, first search at TML.

LC CLASS	# FOUND	# NOT FOUND	% FOUND	% NOT FOUND
A	1,152	88	92.9%	7.1%
B	3,661	1,179	75.6%	24.4%
C	472	48	90.8%	9.2%
D	5,371	709	88.3%	11.7%
E	2,199	641	77.4%	22.6%
F	1,618	222	87.9%	12.1%
G	1,373	667	67.3%	32.7%
H	4,509	3,091	59.3%	40.7%
K	1,233	287	81.1%	18.9%
L	2,452	748	76.6%	23.4%
M	1,230	370	76.9%	23.1%
N	2,392	1,088	68.7%	31.3%
P	13,934	2,666	83.9%	16.1%
Q	9,084	2,156	80.8%	19.2%
R	9,920	3,000	76.8%	23.2%
S	385	135	74.0%	26.0%
T	1,662	658	71.6%	28.4%
U	136	24	85.0%	15.0%
V	21	19	52.5%	47.5%
Z	1,429	251	85.1%	14.9%
TOTAL	66,657	18,383	78.4%	21.6%

APPENDIX A: AUTOLINK DATA - JBC

Data reported below reflects second search at JBC.

LC CLASS	# FOUND	# NOT FOUND	% FOUND	% NOT FOUND
A	1,126	74	93.8%	6.2%
B	3,566	1,154	75.6%	24.4%
C	472	48	90.8%	9.2%
D	5,371	709	88.3%	11.7%
E	2,168	632	77.4%	22.6%
F	1,618	222	87.9%	12.1%
G	1,373	667	67.3%	32.7%
H	4,118	3,002	57.8%	42.2%
K	1,136	264	81.1%	18.9%
L	2,408	712	77.2%	22.8%
M	1,215	345	77.9%	22.1%
N	2,392	1,088	68.7%	31.3%
P	13,871	2,649	84.0%	16.0%
Q	6,391	1,129	85.0%	15.0%
R	164	196	45.6%	54.4%
S	255	65	79.7%	20.3%
T	1,226	574	68.1%	31.9%
U	105	15	87.5%	12.5%
V	21	19	52.5%	47.5%
Z	1,026	94	91.6%	8.4%
TOTAL	52,446	13,994	78.9%	21.1%

APPENDIX A: AUTOLINK DATA - TML

Data reported below reflects first search at TML.

LC CLASS	# FOUND	# NOT FOUND	% FOUND	% NOT FOUND
A	26	14	65.0%	35.0%
B	95	25	79.2%	20.8%
C	0	0	0.0%	0.0%
D	0	0	0.0%	0.0%
E	31	9	77.5%	22.5%
F	0	0	0.0%	0.0%
G	0	0	0.0%	0.0%
H	391	89	81.5%	18.5%
K	97	23	80.8%	19.2%
L	44	36	55.0%	45.0%
M	15	25	37.5%	62.5%
N	0	0	0.0%	0.0%
P	30	10	75.0%	25.0%
Q	2,693	1,027	72.4%	27.6%
R	9,756	2,804	77.7%	22.3%
S	130	70	65.0%	35.0%
T	436	84	83.8%	16.2%
U	31	9	77.5%	22.5%
V	0	0	0.0%	0.0%
Z	403	157	72.0%	28.0%
TOTAL	14,178	4,382	76.4%	23.6%

Appendix B:
SUMMARY CHART: INVENTORY STATUS OF LIBRARY COLLECTIONS

BOOKS: GENERAL COLLECTION AND REFERENCE COLLECTION

COLLECTION	CURRENT STATUS	PROPOSED
A. Books Cataloged before 1975.		
1. And which circulated since 1/1/83.	1. Known to be in collection at least since 1/1/83. Inventoried (and converted, if necessary) upon circulation. Inventoried under Autolink Project.	1. Include in pilot inventory. Comprehensively inventory subjects having a greater than 10% loss rate.
2. And which did not circulate since 1/1/83.	2. Remaining pre-1975 collection will be inventoried as part of the Recon Project. To be completed by June 1990.	2. Complete recon project.
B. Books Cataloged Between 1975 and 1982		
1. that circulated after 1/1/83.	1. Known to be in collection at least since 1/1/83. Inventoried upon circulation.	1. Include in pilot inventory. Comprehensively inventory subjects having a greater than 10% loss rate.
2. that did not circulation after 1/1/83.	2. Known to be in collection at least since 1/1/83. Inventoried under Autolink Project.	2. Include in pilot inventory. Comprehensively inventory subjects having a greater than 10% loss rate.
C. Books Cataloged 1983-present.	1. Known to be in collection at least since 1/1/83. Inventoried when cataloged.	1. Include in pilot inventory. Comprehensively inventory subjects having a greater than 10% loss rate.

SERIALS (JOURNALS)

COLLECTION	CURRENT STATUS	PROPOSED
A. Currently received serials	1. Holdings information added to online catalog. Approx. 10% of holdings physically inventoried. 2. Being converted to Faxon SC10 serials control system.	1. Pilot inventory for each library to develop procedures, cost estimate, etc. 2. Comprehensive inventory of all journals.
B. Serials not currently received or no longer published.	1. Holdings not currently automated. Manual records only.	1. Pilot inventory for each library to develop procedures, cost estimate, etc. 2. Comprehensive inventory of all journals. 3. Retrospectively convert holdings to include in online catalog. 4. Convert holdings to Faxon SC10 serials control system.